

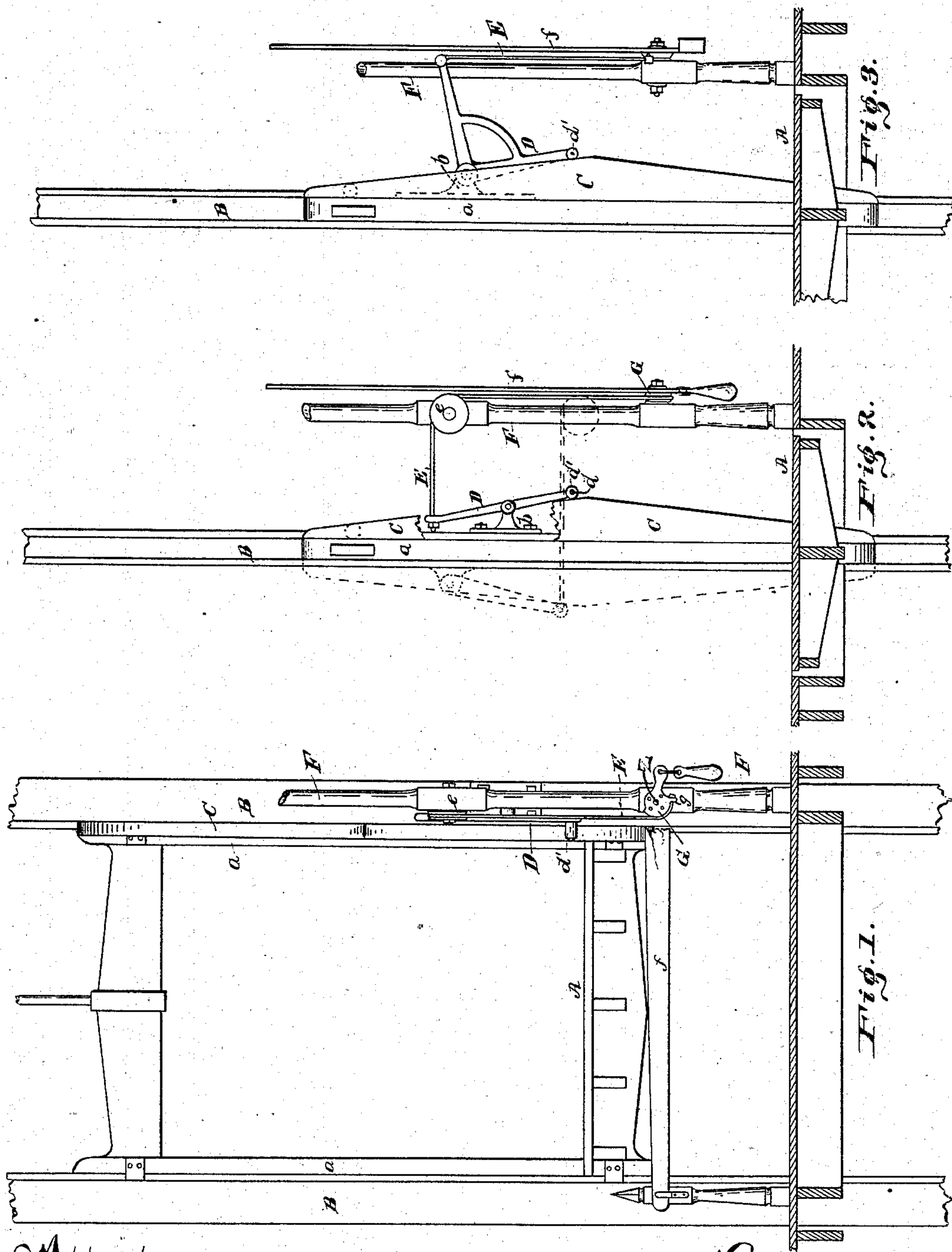
(No Model.)

B. C. VANDUZEN.

ELEVATOR GATE.

No. 288,383.

Patented Nov. 13, 1883.



Witness:  
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# UNITED STATES PATENT OFFICE.

BENJAMIN C. VANDUZEN, OF CINCINNATI, OHIO.

## ELEVATOR-GATE.

SPECIFICATION forming part of Letters Patent No. 288,383, dated November 13, 1883.

Application filed September 15, 1882. (No model.)

*To all whom it may concern:*

Be it known that I, BENJAMIN C. VANDUZEN, of the city of Cincinnati, Hamilton county, and State of Ohio, have invented certain new and useful Improvements in Elevator-Gates, of which the following is a specification.

The object of my invention is to provide a gate for protecting the elevator-hatch, which gate shall be automatically opened and closed as the elevator approaches or recedes from a floor, and which shall be so simply constructed as to be easily attached to an ordinary elevator, and when so attached will not be liable to get out of repair.

A variety of mechanism has been devised for automatically opening and closing an elevator-gate; but all such mechanism has heretofore been more or less complicated and liable to get out of order, and not readily applied to ordinary elevators. My invention overcomes all of these objections, and can be attached to elevators at a very small expense.

Referring to the drawings forming part of this specification, Figure 1 is a front view of an elevator-hatch, showing the elevator a little above the floor and the gate down. Fig. 2 is a side view of an elevator-hatch, showing the platform of the elevator on a level with the floor and the gate elevated; and Fig. 3 is a side view of an elevator-hatch, showing a modification of my invention.

A is the platform of the elevator, which has the usual side or lifting posts, *a*, which move up and down between the guideways B. To one of the posts *a* is secured a double incline, C, projecting preferably toward the front of the elevator.

To the way B which is at that side of the elevator to which the double incline is attached is secured a bracket, *b*, projecting toward the front of the elevator, and in the end of which is fulcrumed a lever, D.

At the side of the lower end of the lever D is a roller-stud, *d*, on which is a roller, *d'*, which projects far enough from the side of the lever to come in contact with the double incline C as the elevator passes up or down.

To the upper end of the lever D is connected one end of a cord or chain, E, which cord passes over a pulley, *e*, attached to the gate-post F, and is connected to the gate *f*, near

the point at which the latter is pivoted to the post F. The preferable method for connecting the end of the cord E to the gate is that shown in the drawings.

At or near the end of the bar which is pivoted to a fixed support, as F, is a quadrant, G, the center of which is formed by the pin or pivot Z, by which the gate is pivoted to the post, and at the lower end of this quadrant is a lug, *g*, to which the cord is connected, the cord passing around the periphery of the quadrant. The quadrant is so connected to the gate that oscillation of the quadrant oscillates the gate. In the drawings a preferred mode of connection is shown, the quadrant being there shown applied directly to the side of the gate *f*.

To the pivoted end of the gate is connected the usual counterbalance-weight, made of any desired form.

The operation of my invention, as above described, is as follows. Supposing the gate to be down and the elevator at the point shown in Fig. 1, and descending, when the lower end of the double incline C comes in contact with the roller *d'* at the lower end of the lever D it forces this end of the lever in a direction away from the post *a*, which causes the upper end of the lever to pull on the cord E, and this, passing over the pulley *e* and around the quadrant G, causes the gate to rise until the roller *d'* is at the widest part of the double incline, at which time the elevator-platform is on a level with the floor, and the parts assume the position shown in Fig. 2. As the elevator continues to descend the weight of the free ends of the gate causes it to descend, the roller *d'* being kept against the upper half of the incline C, the width of which gradually diminishes toward its end, and when the incline has passed away from the roller the gate is down and the approach to the elevator closed. When the elevator moves up instead of down the hatchway, the motion is precisely the same as that described. If the elevator runs very rapidly, the length of the double incline must be increased in order that the gate shall not be raised and lowered too suddenly, the length of the incline being governed by the speed at which the elevator runs. It may sometimes be desirable to connect the double incline to the rear side of the post *a*, as shown by dotted



lines in Fig. 2, in which event, the lever D should be pivoted at one end, instead of at the middle, to the bracket *b*, the end of the cord E and the roller *d'* both being connected to the opposite end of the lever, all of which is shown by dotted lines in Fig. 2; and when this construction is adopted the operation is practically the same as before described.

In the modification shown in Fig. 3 the lever D is made in the form of a bell-crank, one arm of which is provided with the roller *d'*, and to the other arm, which projects toward the front of the elevator, is connected the cord E, thus dispensing with the pulley *e*, and yet operating in a manner similar to that before described. This operating mechanism may be readily connected to any ordinary elevator, and because of its simplicity it is not liable to get out of order, and its operation is effective and certain.

What I claim as new and of my invention, and desire to secure by Letters Patent, is—

1. In a device for operating elevator-gates, the combination of the bar or gate *f*, pivoted at or near one end, and the quadrant G, applied to the gate at the pivot Z, upon which

the gate *f* turns, and the cord E, substantially as and for the purposes specified.

2. In a device for controlling the entrance to an elevator, the combination of the bar or gate *f*, pivoted at or near one end to a fixed support, the quadrant G, connected directly to the gate at the pivot Z, and concentric with the pivot, and cord E, connected to said quadrant, and mechanism for enabling the movement of the elevator-car to operate said cord, substantially as and for the purposes specified.

3. The elevator provided with double incline C, in combination with the lever D, pivoted at the center to the bracket *b*, secured to the guideway B, and provided at one end with the roller *d'*, the other end being connected to the lifting-cord E, and the gate *f*, pivoted to post F, and having a quadrant, G, to which the end of the lifting-cord is connected, said post being provided with a pulley, *e*, over which the cord E passes, substantially as and for the purposes specified.

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Witnesses:

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